Response Under 37 CFR §1.116
EXPEDITED PROCEDURE
Examining Group: 2827
BOX AF

H-914

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

T. MIYAMOTO et al

Serial No. 09/530,490 Group Art Unit: 2827

Filed: April 28, 2000 Examiner: D. Graybill

For: SEMICONDUCTOR DEVICE AND PROCESS FOR MANUFACTURING THE SAME

RESPONSE

BOX AF
Assistant Commissioner of Patents
Washington, D.C. 20231

Sir:

In response to the Office Action dated February 19, 2002, Applicants submit the following remarks.

REMARKS

No claims have been amended, canceled or added. Accordingly, claims 34-37 are currently pending in the application.

Claims 34-37 stand rejected under 35 U.S.C. §102 as being anticipated by Akagawa et al. This rejection is traversed as follows.

Contrary to the Examiner's assertion, Akagawa et al do not disclose, at a minimum, a chip scale package having an element (b) as defined below:

> (b) an elastomer layer formed on said surface passivation film to cover said main surface of said semiconductor chip and to expose said bonding pads, said elastomer layer having an elastic modulus relatively lower than said surface passivation film.

In particular, Akagawa et al do not disclose that the elastic modulus of the elastomer layer is lower than that of the surface passivation film. This lower elastic modulus elastomer layer on the main surface of the chip can reduce the stress acting on the bump electrodes which are formed in a later process due to the difference in thermal coefficient of expansion between the chip and the mounting substrate at the time of surface-mounting (solder reflow). The relatively higher elastic modulus surface passivation film (e.g., silicon nitride film) reduces intrusion of moisture into the main surface of the chip, thereby providing high mechanical strength and increased moisture resistance of the chip scale package.

Akagawa et al do not disclose the specific relation between the elastomer layer and the surface passivation film. In addition, Akagawa et al do not provide any disclosure that

would lead to the inference that the elastomer layer and surface passivation film have an elastic modulus as recited in the pending claims. Therefore, it is submitted that the pending claims patentably define the present invention over Akagawa et al.

In view of the foregoing amendments and remarks, Applicants contend that the above-identified application is in condition for allowance. Reconsideration and examination are respectfully requested.

Respectfully submitted,

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